



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,636	03/31/2004	Kentaro Sekiyama	061069-0309049	4978
909	7590	04/06/2005	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			HARRINGTON, ALICIA M	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	

2873

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,636

Applicant(s)

SEKIYAMA, KENTARO

Examiner

Alicia M. Harrington

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-18 is/are allowed.
- 6) ☒ Claim(s) 1, 14, 15, 20-24 is/are rejected.
- 7) ☒ Claim(s) 2-13, 19 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0304.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

After further review of the application and restriction requirement, the Examiner is withdrawing the restriction requirement. Claims 1-25 will be examined.

Information Disclosure Statement

The Examiner has considered the information disclosure statement filed on 3/31/04.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant states the imaging optical system is a variable mirror and not a deformable mirror. However, the Examiner is unclear to what applicant it claiming. A variable mirror can be a deformable mirror as applicant later claims in another embodiment (see claim 23). Thus, the claim is indefinite.

The Examiner will examine the claim as best understood by the Examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

Art Unit: 2873

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,14,15, 20-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Mihara et al (US 2003/0160902).

Regarding claim 1, Mihara discloses an imaging optical system for forming an image of an object, comprising (see figures 15-18):

a first lens unit (G1-1) located at a most object-side position; and

at least one of second lens units (G2) interposed between the first lens unit and the image,

at least one of the second lens units being moved along an optical axis, wherein the first lens unit includes, in order from an object side:

at least one lens with negative refracting power (see figures 15-17);

a deformable mirror; and

at least one lens with positive refracting power, and focusing is performed by deformation of the deformable mirror (see sections 13, 30, 184-188).

Regarding claim 14, Mihara discloses an imaging optical system according to claim 1, wherein the first lens unit has negative refracting power (see section 184).

Regarding claim 15, Mihara discloses an imaging optical system according to claim 1, further comprising a variable mirror instead of the deformable mirror (see sections 20 and 189).

Regarding claim 20, Mihara discloses an imaging optical system comprising at least one lens unit moved along an optical axis when a magnification of the optical system is changed, the lens unit having two relatively decentered lenses (see figures 15-16; section 185).

Regarding claim 21, Mihara discloses an imaging optical system according to claim 20, further comprising at least one variable optical-property element (a mirror, see figure 16).

Art Unit: 2873

Regarding claim 22, Mihara discloses an imaging optical system according to claim 21, wherein the variable optical-property element is a variable mirror (a mirror; see figure 16 and section 185).

Regarding claim 23, Mihara discloses an imaging optical system according to claim 22, wherein the variable mirror is a deformable mirror (see section 184-185).

Regarding claim 24, Mihara discloses an imaging apparatus comprising: (see figures 15-17) an imaging optical system (see sections 184-188), and an image sensor (I), the imaging optical system comprising: a first lens unit (G1-1) located at a most object-side position; and

at least one of second lens units (for example G2) interposed between the first lens unit and the image, at least one of the second lens units being moved along an optical axis, wherein the first lens unit includes, in order from an object side:

at least one lens with negative refracting power, a deformable mirror; and at least one lens with positive refracting power, and focusing is performed by deformation of the deformable mirror (see sections 30, 184-187).

Allowable Subject Matter

Claims 16-18 are allowed.

Claims 2-13,19,25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: Regarding claim 16, prior art fails to fairly teach or suggest an imaging optical system, in order from the object side at

Art Unit: 2873

least comprising the second and fourth lens unit being moved dependently along an optical axis and satisfying the claimed condition.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Harrington whose telephone number is 571 272 2330. The examiner can normally be reached on Monday - Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571 272 2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AMH

Alicia M Harrington
Examiner
Art Unit 2873